## AMENDMENTS TO THE CLAIMS

1-123. (Canceled)

124. (Original) A method of forming a CMOS imager substrate having improved surface charge loss properties, comprising the steps of:

providing a semiconductor substrate having a doped layer of a first conductivity type; and

forming a shallow contiguous buried doped region of a second conductivity type beneath the entire surface of said semiconductor substrate.

125. (Original) The method according to claim 124, wherein the first conductivity type is p-type, and the second conductivity type is n-type.

126. (Original) The method according to claim 124, wherein the semiconductor substrate is a silicon substrate.

127. (Original) The method according to claim 124, wherein the doping step comprises ion implantation.

128. (Original) The method according to claim 124, wherein said buried doped region is doped with a dopant selected from the group consisting of arsenic, antimony and phosphorous.

129. (Original) The method according to claim 128, wherein said buried doped region is doped at a dopant concentration of from about $1x10^{11}$ ions/cm$^2$ to about $1x10^{13}$ ions/cm$^2$.

130. (Original) The method according to claim 129, wherein said doped layer is doped at a dopant concentration of from about $1x10^{14}$ ions/cm$^2$ to about $5x10^{16}$ ions/cm$^2$.

131. (Original) A method of forming an imaging device, comprising the steps of:

providing a semiconductor substrate having a doped layer of a first conductivity type;

forming a first doped region of a second conductivity type in the doped layer;

forming a second doped region of said second conductivity type in the doped layer spaced from said first doped region;

forming a third doped region of said second conductivity type in the doped layer spaced from said second doped region;

forming a buried doped region of said second conductivity type in said doped layer adjacent said first and second doped regions and adjacent said second and third doped regions, wherein said buried doped region is doped at a dopant concentration less than said first, second and third doped regions;

forming a photogate over said buried doped region adjacent said first doped region;

forming a transfer gate over said buried doped region between said second and said third doped regions;

forming a contact between said second doped region and a source follower transistor wherein the gate of said source follower transistor is formed over said buried doped region.

132. (Original) The method according to claim 131, wherein the first conductivity type is p-type, and the second conductivity type is n-type.

133. (Original) The method according to claim 131, wherein said first doped region, said second doped region and said third doped region are formed by ion implantation.

134. (Original) The method according to claim 133, wherein said first doped region, said second doped region and said third doped region are doped with dopants selected from the group consisting of arsenic, antimony and phosphorous.

135. (Original) The method according to claim 134, wherein the dopant is phosphorus.

136. (Original) The method according to claim 134, wherein said first doped region, said second doped region and said third doped region are doped at a dopant concentration of from about $1x10^{14}$ ions/cm$^2$ to about $5x10^{16}$ ions/cm$^2$.

137. (Original) The method according to claim 131, wherein said buried doped region is formed by ion implantation.

138. (Original) The method according to claim 131, wherein said buried doped region is formed under the entire surface of said doped layer.

139. (Original) The method according to claim 131, wherein said buried doped region is doped with dopants selected from the group consisting of arsenic, antimony and phosphorous.

140. (Original) The method according to claim 139, wherein said dopant is phosphorous.

141. (Original) The method according to claim 139, wherein said buried doped region is doped at a dopant concentration of from about $1x10^{11}$ ions/$cm^2$ to about $1x10^{13}$ ions/$cm^2$.

142. (Original) A method of forming an imaging device, comprising the steps of:

providing a semiconductor substrate having a doped layer of a first conductivity type;

forming a first doped region of a second conductivity type in the doped layer;

forming a second doped region of said second conductivity type in the doped layer spaced from said first doped region;

forming a third doped region of said second conductivity type in the doped layer spaced from said second doped region;

forming a photogate over said first doped region;

forming a transfer gate over said second and said third doped regions;

forming a contact between said second doped region and a source follower transistor wherein the gate of said source follower transistor is over said substrate;

forming a buried doped region of said second conductivity type in said doped layer adjacent said first and second doped regions and adjacent said second and third doped regions and under said photogate, transfer gate and said source follower transistor gate, wherein said buried doped region is doped at a dopant concentration less than said first, second and third doped regions.

143. (Original) The method according to claim 142, wherein the first conductivity type is p-type, and the second conductivity type is n-type.

144. (Original) The method according to claim 142, wherein said first doped region, said second doped region and said third doped region are formed by ion implantation.

145. (Original) The method according to claim 144, wherein said first doped region, said second doped region and said third doped region are doped with dopants selected from the group consisting of arsenic, antimony and phosphorous.

146. (Original) The method according to claim 145, wherein the dopant is phosphorus.

147. (Original) The method according to claim 145, wherein said first doped region, said second doped region and said third doped region are doped at a dopant concentration of from about $1x10^{14}$ ions/$cm^2$ to about $5x10^{16}$ ions/$cm^2$.

148. (Original) The method according to claim 142, wherein said buried doped region is formed by ion implantation.

149. (Original) The method according to claim 142, wherein said buried doped region is formed under the entire surface of said doped layer.

150. (Original) The method according to claim 142, wherein said buried doped region is doped with dopants selected from the group consisting of arsenic, antimony and phosphorous.

151. (Original) The method according to claim 150, wherein said dopant is phosphorous.

152. (Original) The method according to claim 150, wherein said buried doped region is doped at a dopant concentration of from about $1x10^{11}$ ions/$cm^2$ to about $1x10^{13}$ ions/$cm^2$.